

FIG. 1

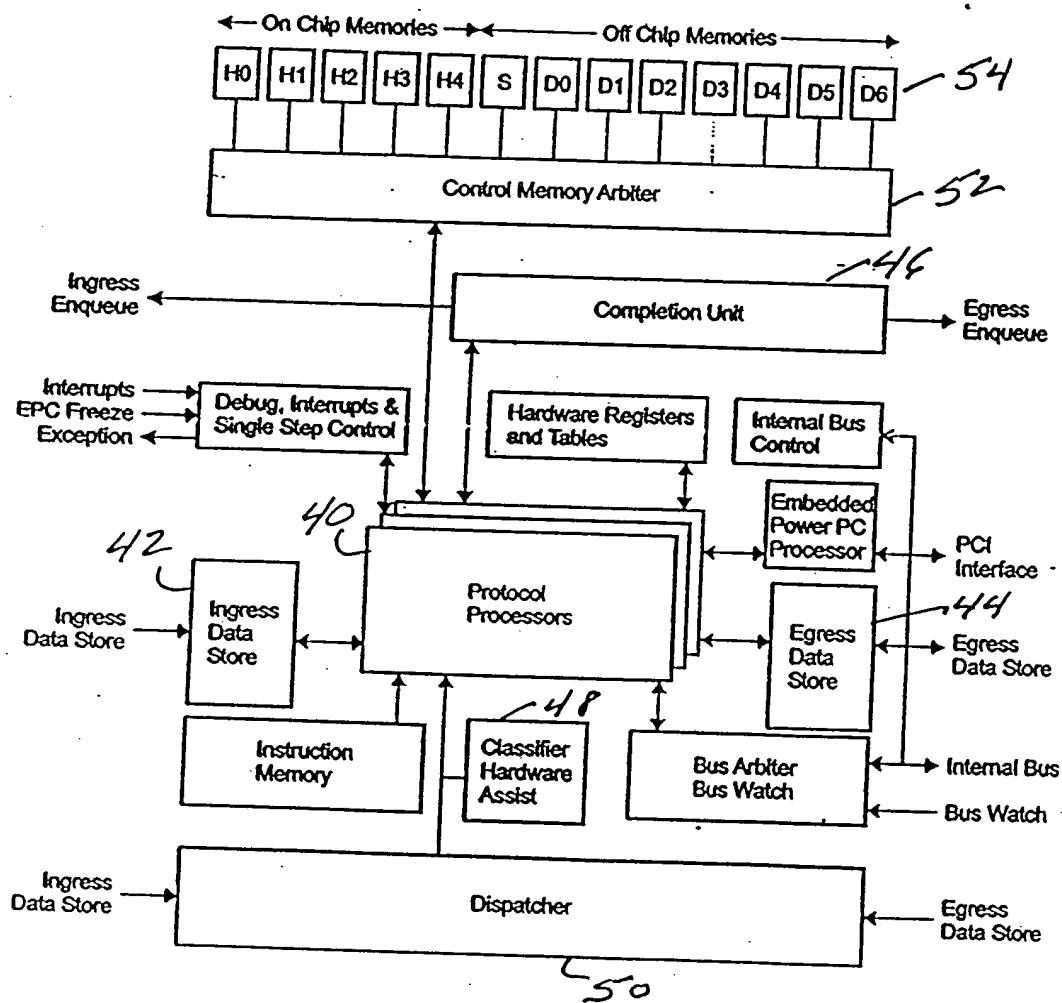


FIG. 2

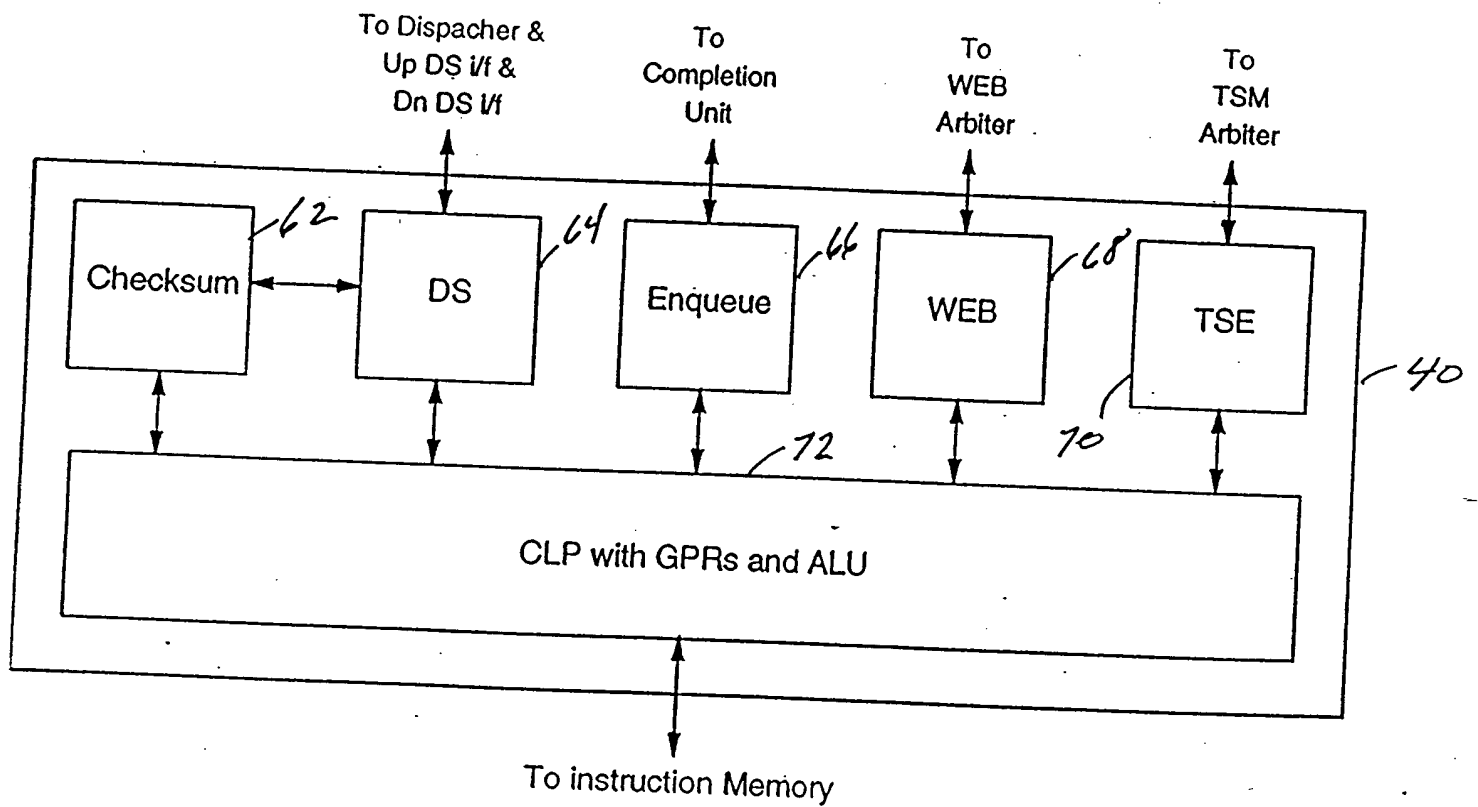


FIG. 3

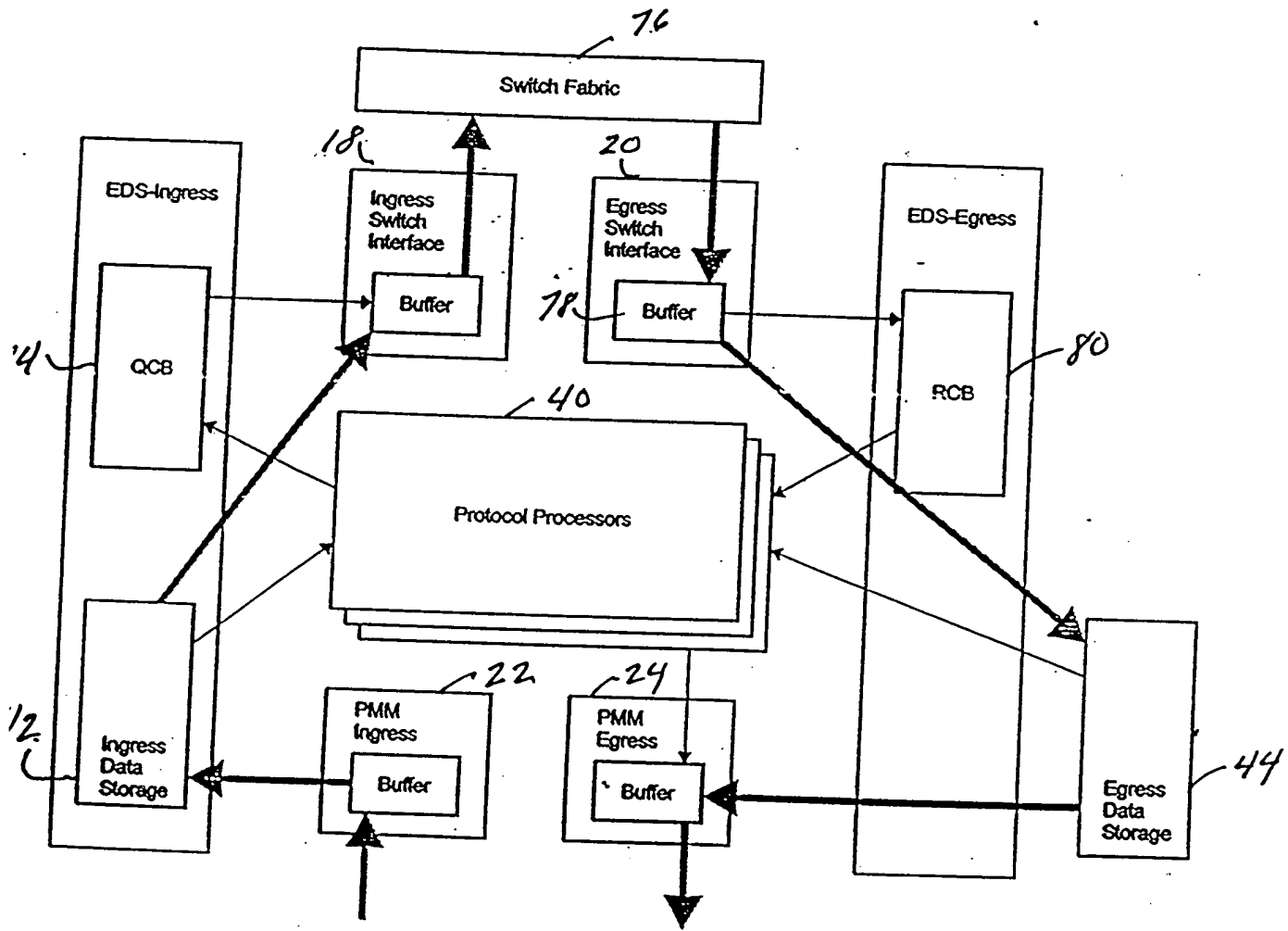


FIG. 4

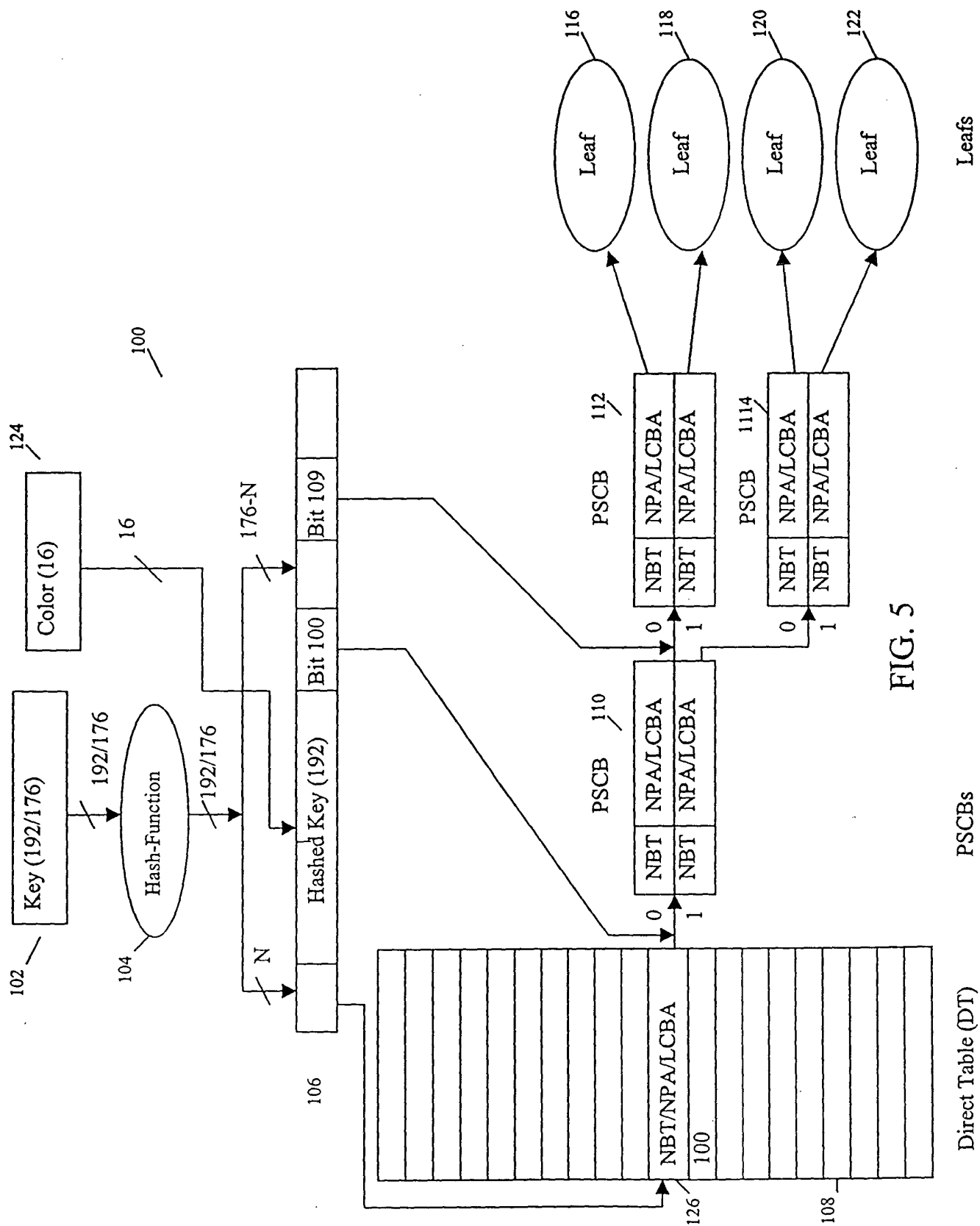
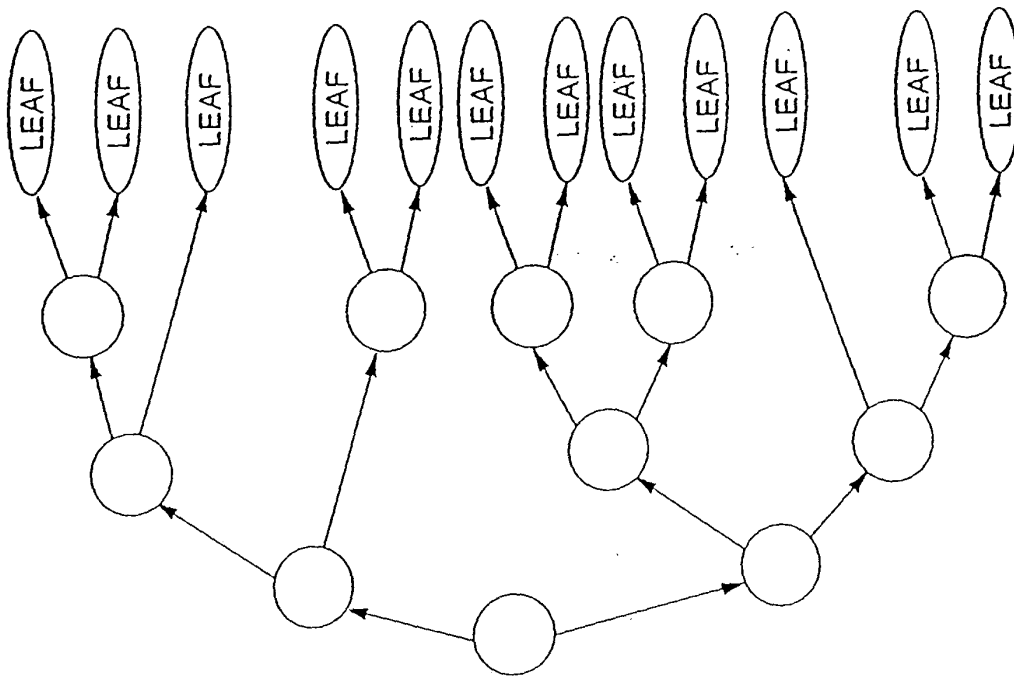
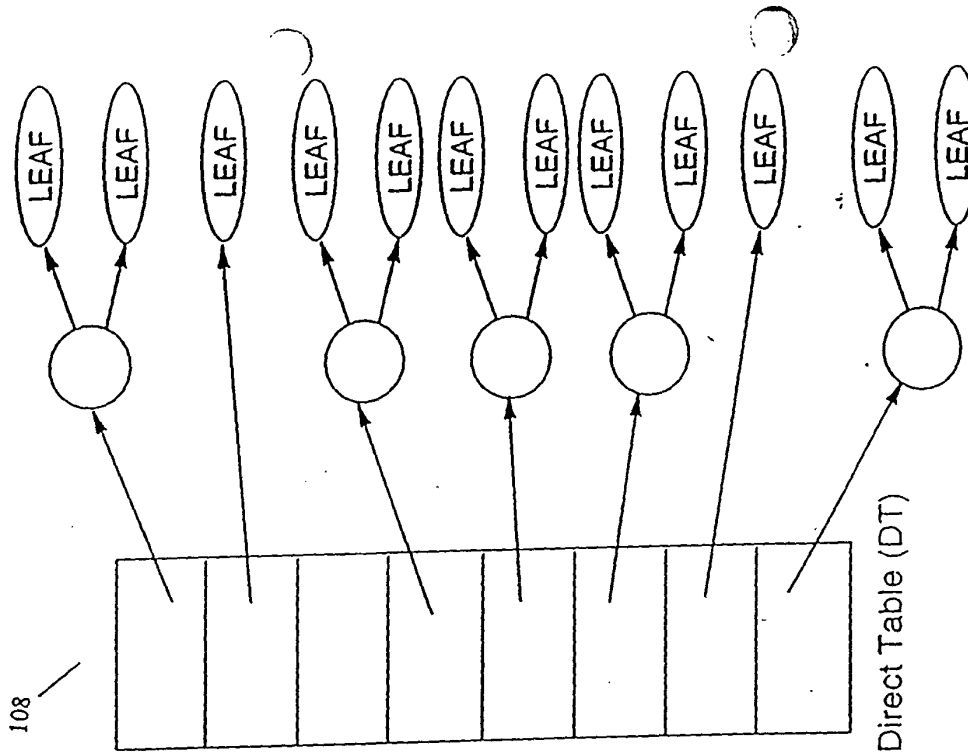


FIG. 5

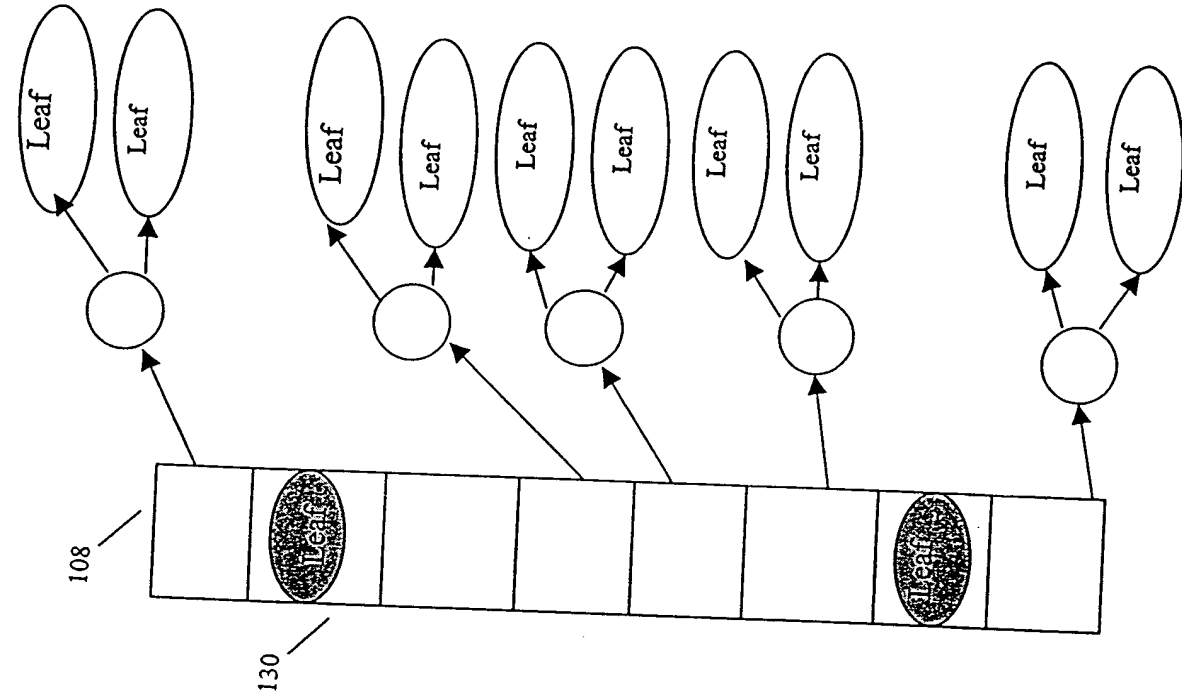


Datastructure without using a Direct Table



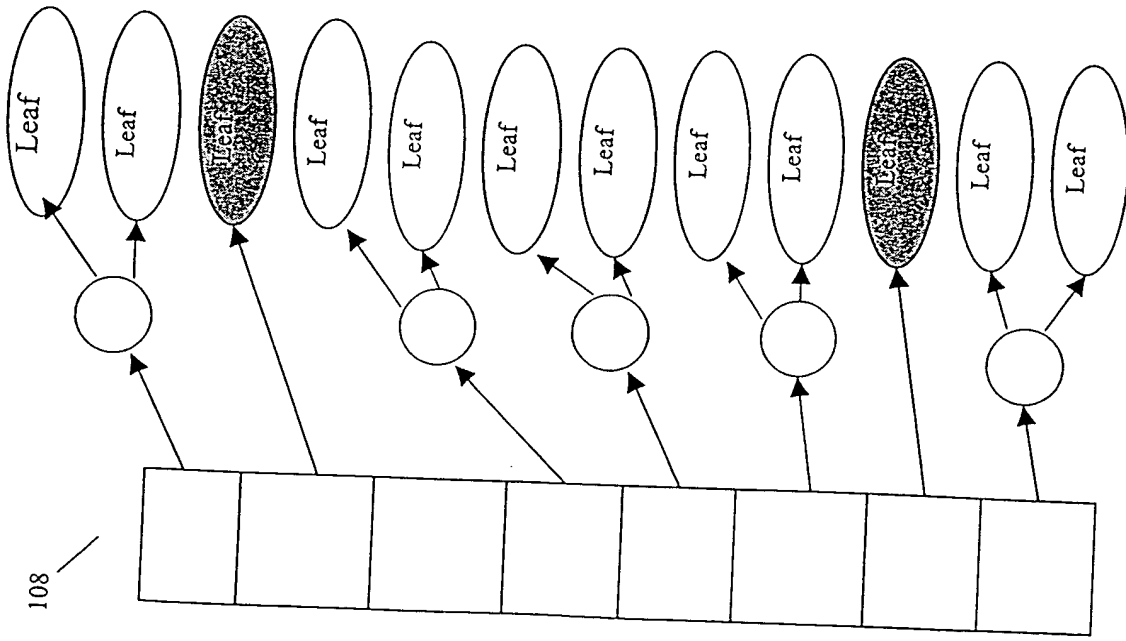
Datastructure with using a Direct Table

FIG. 6



Datastructure with Direct Leaves

FIG. 7



Datastructure without Direct Leaves

| Format | Conditions | Valid in DTEntry ? | Valid in PSCB? | Format (2bits) | NPA/LCBA (26 bits) | NBT (8 bits) |
|----------------------|--|--------------------|----------------|----------------|--------------------|--------------|
| Empty DTEntry | No leaves | Yes | No | 00 | 0 | 0 |
| Pointer to next PSCB | DtEntry contains pointer | Yes | Yes | 00 | NPA | NBT |
| Pointer to leaf | Single leaf associated with DTEntry; LCBA field contains pointer | Yes | Yes | 01 | LCBA | 0 |

Fig. 8

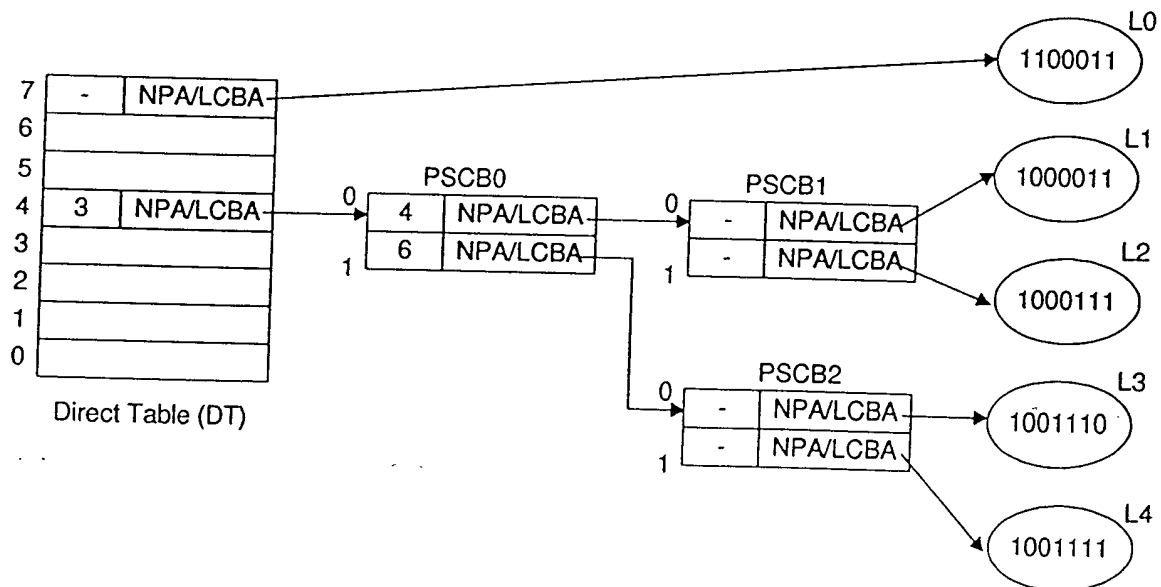


Fig. 9

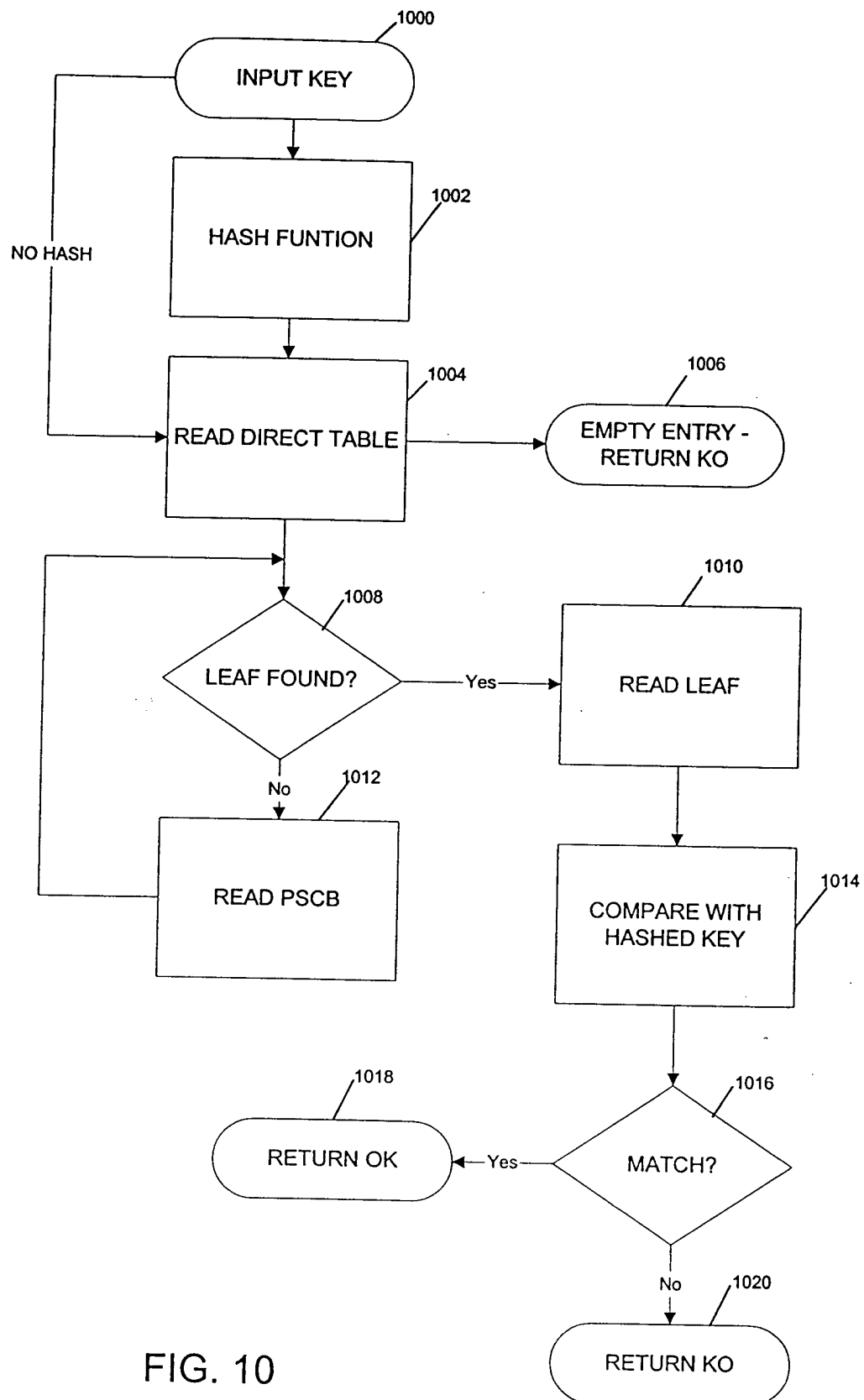


FIG. 10

LUDefTable Tree Definition

| Field | Size | Bits |
|----------------|------|----------|
| CacheEntry | 1 | 0 |
| Tree_Type | 2 | 2..1 |
| hash-type | 4 | 6..3 |
| color_en | 1 | 7 |
| PIP2_max_size | 5 | 12 .. 8 |
| NPARope_en | 1 | 13 |
| NPASMT_en | 1 | 14 |
| ComplIndex_en | 1 | 15 |
| PSCB_fq_index | 6 | 21 .. 16 |
| PSCB_Height | 1 | 22 |
| Mask_Vector_En | 1 | 23 |
| ComplIndex | 8 | 31..24 |
| DT_base_addr | 26 | 57 .. 32 |
| DT_size | 4 | 61 .. 58 |
| DT_interleaf | 2 | 63 .. 62 |
| Leaf_fq_index | 6 | 69 .. 64 |
| Leaf_Width | 2 | 71 .. 70 |
| Leaf_Height | 3 | 74 .. 72 |
| DirectLeafEn | 1 | 75 |

FIG. 11

| Field | Size | Address in TSM where PSCB is located |
|--------|------|---|
| NPA0 | 26 | Next PSCB address: pointer to next PSCB in the tree for 0-part of PSCB |
| NBT0 | 8 | Next bit to test for 0-part of PSCB |
| LCBA0 | 26 | Leaf control block address: pointer to leaf for 0-part of PSCB |
| NPA1 | 26 | Next PSCB address: pointer to next PSCB in the tree for 1-part of PSCB |
| NBT1 | 8 | Next bit to test for 1-part of PSCB |
| LCBA1 | 26 | Leaf control block address: pointer to leaf for 1-part of PSCB |
| Index | 8 | Index of this PSCB (physically stored in the previous PSCB) |
| PatBit | 1 | The value of HashedKey[Index], based on the value of the Index field in the PSCB register |

FIG. 12

| Field Name | Length | Description |
|------------|--------------|--|
| NLARope | 4 bytes | Leaf chaining pointer, aging information and direct leaf information |
| Prefix_Len | 1 byte | This field is not used by the TSE for FM trees and can be used by picocode |
| pattern | 2 - 18 bytes | Pattern to be compared with the HashedKey |
| UserData | variable | The contents of this field is under complete picocode control; the UserData field can include one or more counters |

FIG. 13

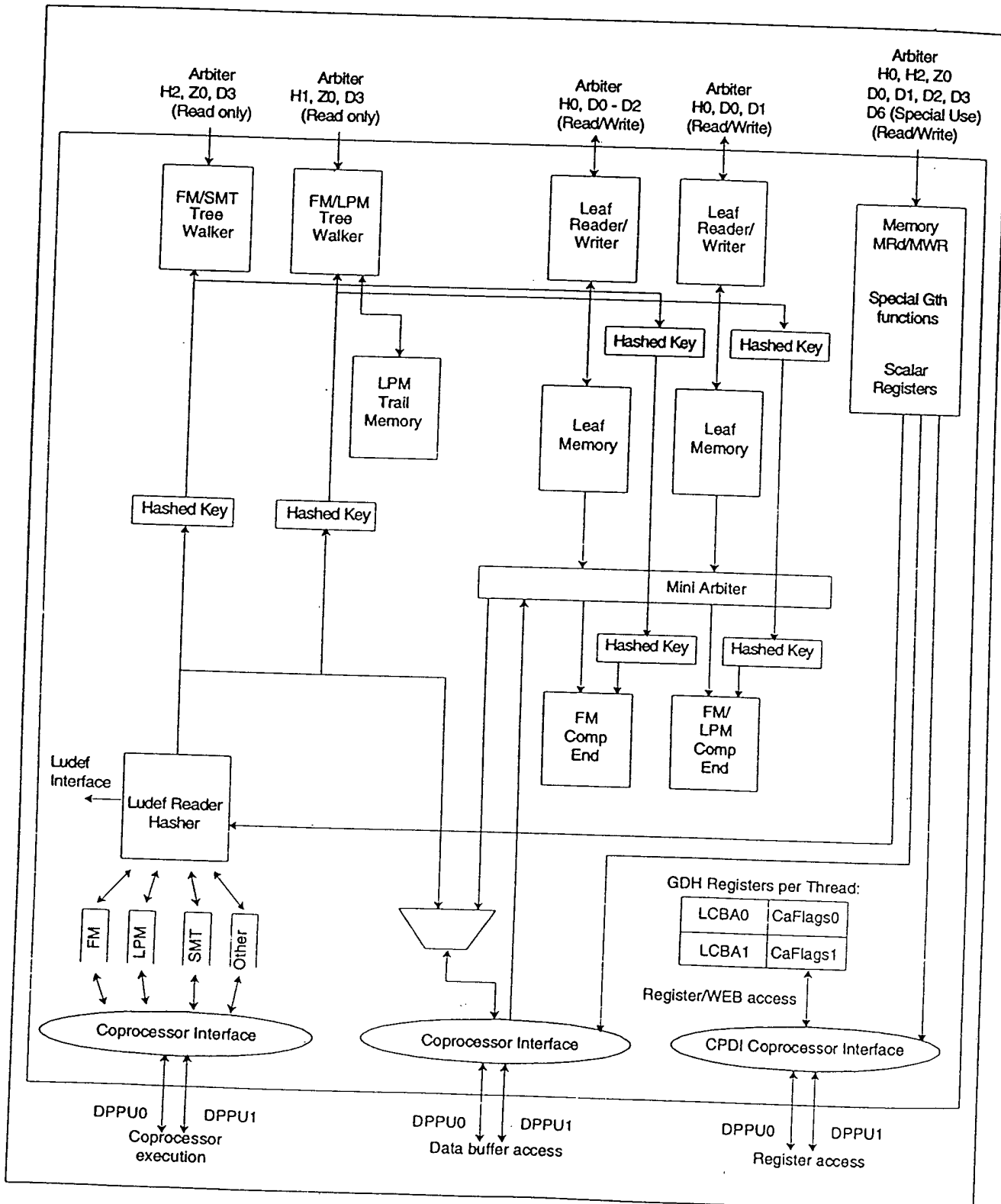


FIG. 14